

What is claimed is:

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1. An imaging device comprising:
a plurality of detectors for converting an
electromagnetic radiation into electric signals;
a plurality of read circuits, each connected to
5 said detector and including a first regulated
constant-current source for supplying a constant bias
current to said detectors, and a second regulated
constant-current source connected to said first
regulated constant-current source, for correcting
10 variations inherent in said detectors.

2. An imaging device according to claim 1,
wherein said reading circuit further includes a third
regulated constant-current source connected to said
first regulated constant-current source, for canceling
5 said constant bias current.

3. An imaging device according to claim 1,
wherein said first regulated constant-current source
comprises a bipolar transistor having an emitter
connected to said detectors and a collector connected
5 to said second regulated constant-current source.

4. An imaging device according to claim 1,
wherein said first regulated constant-current source

comprises a field-effect transistor having a source connected to said detectors and a drain connected to
5 said second regulated constant-current source.

5. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a bipolar transistor and a resistor connected to an emitter of said bipolar transistor.

6. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a field-effect transistor and a resistor connected to a source of said field-effect transistor.

7. An imaging device according to claim 5, wherein said resistor has a temperature coefficient which is the same as said detectors.

8. An imaging device according to claim 6, wherein said resistor has a temperature coefficient which is the same as said detectors.

9. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a plurality of bipolar transistors and a plurality of resistors connected to emitters of said

- 5 bipolar transistors, each of said resistors having a resistance inversely proportional to an area of the emitter of one of said bipolar transistors.

10. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a plurality of field-effect transistors and a plurality of resistors connected to sources of said
- 5 field-effect transistors, each of said resistors having a resistance inversely proportional to a gate length of one of said field-effect transistors.
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11. An imaging device according to claim 5, wherein said resistance ranges from 1 k Ω to 500 k Ω , and preferably from 5 k Ω to 100 k Ω .

12. An imaging device according to claim 6, wherein said resistance ranges from 1 k Ω to 500 k Ω , and preferably from 5 k Ω to 100 k Ω .

13. An imaging device according to claim 9, wherein said resistance ranges from 1 k Ω to 500 k Ω , and preferably from 5 k Ω to 100 k Ω .

14. An imaging device according to claim 10, wherein said resistance ranges from 1 k Ω to 500 k Ω ,

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and preferably from $5\text{ k}\Omega$ to $100\text{ k}\Omega$.

15. An imaging device according to claim 1, further comprising two data buffers for storing variation data inherent in said detectors.

16. An imaging device according to claim 1, further comprising means for comparing signals from pixels of the detectors with an upper limit of a dynamic range of the reading circuit.

17. An imaging device according to claim 1, further comprising means for comparing signals from pixels of the detectors with a lower limit of a dynamic range of the reading circuit.

18. An imaging device according to claim 16, further comprising means for generating variation data inherent in said detectors based on the result of the comparison.

19. An imaging device according to claim 17, further comprising means for generating variation data inherent in said detectors based on the result of the comparison.

20. An imaging device according to claim 16,
further comprising means for manipulating an MSB of
each of the variation data inherent in said detectors
to determine a value of the MSB based on the result of
the comparison, and successively manipulating bits of
the variation data of said detectors to determine
values of the bits up to an LSB thereof.

21. An imaging device according to claim 17,
further comprising means for manipulating an MSB of
each of the variation data inherent in said detectors
to determine a value of the MSB based on the result of
the comparison, and successively manipulating bits of
the variation data of said detectors to determine
values of the bits up to an LSB thereof.

22. An imaging device comprising:

a plurality of detectors arranged in a two-
dimensional matrix, for converting electromagnetic
radiation into electric signals;

a plurality for switching means, each associated
with said detector, for selecting the associated
detector;

a plurality of read-out circuits, each connected
to said detectors in each column direction;

a plurality of regulated constant-current source,

each connected to said read-out circuit, for
correcting variations inherent in said detectors;

15 a plurality of data buffers, each connected to
said regulated constant-current source, for storing
data for fixed-pattern-noise correction to be supplied
to said regulated constant-current source;

a plurality of multiplexers, each associated with
said read-out circuit, for selecting and outputting
the output from the associated read circuit;

20 a vertical shift register for outputting vertical
selection signals to successively turn on said
switching means in the respective rows of the matrix;
and

25 a horizontal shift register for outputting
horizontal selection signals to successively select
said multiplexers.

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